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New set of claims

- 10 1. A fuel injection apparatus for an internal combustion
engine (10) which performs a direct injection operation for
injecting fuel from an injector for cylinder injection (33)
into a cylinder and a port injection operation for
injecting fuel from an injector for intake port injection
15 (31) into an intake port (13), characterized in that
when a request to change a fuel injection mode from a
mode of fuel injection from the injector for cylinder
injection (33) to a mode of fuel injection from the
injector for intake port injection (31) is made, the fuel
20 injection mode of a particular cylinder is changed at a
point of time according to the request to change the fuel
injection mode for the particular cylinder.
- 25 2. The fuel injection apparatus for an internal combustion
engine (10) according to claim 1, characterized in that
in the case where the request to change the fuel
injection mode is made before the fuel injection mode is
set to a port injection mode, the fuel injection mode is
changed to the mode of fuel injection from the injector for
30 intake port injection (31) simultaneously with the request
to change the fuel injection mode.
- 35 3. The fuel injection apparatus for an internal combustion
engine (10) according to claim 1, characterized in that
in the case where the request to change the fuel
injection mode is made during a period after the port
injection mode is set and before a direct injection mode is

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set, when a requested port injection mode is an intake synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) simultaneously with the request
5 to change the fuel injection mode, and when a requested port injection mode is an intake non-synchronous injection mode, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to
10 change the fuel injection mode is made.

4. The fuel injection apparatus for an internal combustion engine (10) according to claim 1, characterized in that
in the case where the request to change the fuel
15 injection modes is made after the port injection mode and the direct injection mode are set, the fuel injection mode is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to change the fuel injection mode is
20 made.

5. A fuel injection apparatus for an internal combustion engine (10) according to claim 1, wherein
when a fuel injection mode is changed from a mode of
25 fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for intake port injection (31), the fuel injection mode is set to an intake synchronous injection mode until an amount of fuel adhering to a wall surface of the intake port (13) due
30 to port injection becomes stable.

6. A fuel injection control method for an internal combustion engine (10) which performs a direct injection operation for injecting fuel from an injector for cylinder
35 injection (33) into a cylinder and a port injection

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operation for injecting fuel from an injector for intake
port injection (31) into an intake port (13), characterized
in that

when a request to change a fuel injection mode from a
5 mode of fuel injection from the injector for cylinder
injection (33) to a mode of fuel injection from the
injector for intake port injection (31) is made, the fuel
injection mode of a particular cylinder is changed at a
point of time according to the request to change the fuel
10 injection mode for the particular cylinder.

7. The fuel injection control method for an internal
combustion engine (10) according to claim 6, characterized
in that

15 in the case where the request to change the fuel
injection mode is made before the fuel injection mode is
set to a port injection mode, the fuel injection mode is
changed to the mode of fuel injection from the injector for
intake port injection (31) simultaneously with the request
20 to change the fuel injection mode.

8. The fuel injection control method for an internal
combustion engine (10) according to claim 6, characterized
in that

25 in the case where the request to change the fuel
injection mode is made during a period after the port
injection mode is set and before a direct injection mode is
set, when a requested port injection mode is an intake
synchronous injection mode, the fuel injection mode is
30 changed to the mode of fuel injection from the injector for
intake port injection (31) simultaneously with the request
to change the fuel injection mode, and when a requested
port injection mode is an intake non-synchronous injection
mode, the fuel injection mode is changed to the mode of
35 fuel injection from the injector for intake port injection

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(31) after one cycle has elapsed since the request to change the fuel injection mode is made.

9. The fuel injection control method for an internal
5 combustion engine (10) according to claim 6, characterized in that

in the case where the request to change the fuel injection modes is made after the port injection mode and the direct injection mode are set, the fuel injection mode
10 is changed to the mode of fuel injection from the injector for intake port injection (31) after one cycle has elapsed since the request to change the fuel injection mode is made.

15 10. A fuel injection control method for an internal combustion engine (10) according to claim 6, wherein

when a fuel injection mode is changed from a mode of fuel injection from the injector for cylinder injection (33) to a mode of fuel injection from the injector for
20 intake port injection (31), the fuel injection mode is set to an intake synchronous injection mode until an amount of fuel adhering to a wall surface of the intake port (13) due to port injection becomes stable.